

REMARKS

The Examiner acknowledged the filing of the Information Disclosure Statements in this case. However, the Examiner requested that the Applicants send copies of the papers and foreign patents referenced therein as the Examiner did not have access to those submissions.

The Examiner also objected to the specification due to a variety of minor informalities. The Examiner also rejected claims 13-15 under 35 U.S.C. § 112, second paragraph, as indefinite. Additionally, the Examiner rejected claims 1, 5, 12, 14, and 16 under 35 U.S.C. § 102(e) as anticipated by Wooster et al. (U.S. Patent No. 6,023,680). Moreover, the Examiner rejected claims 2-4, 6-11, 13, 15, and 17-22 under 35 U.S.C. § 103(a) as obvious over Wooster et al. (6,023,680) in view of Xi et al. (U.S. Patent No. 6,597,967). Further, the Examiner rejected Claim 15 under 35 U.S.C. § 103(a) as obvious over Wooster et al. (6,023,680) in view of Merat et al. (U.S. Patent No. 5,465,221).

Information Disclosure Statement:

The Examiner acknowledged the Information Disclosure Statements previously filed by the Applicants. However, the Examiner indicated that he did not have access to the papers and foreign patents referenced in those information disclosure statements for some reason. Accordingly, the Applicants are resubmitting copies of those submissions herewith for the Examiner's convenience.

The Objections to the Specification:

The Examiner objected to the specification due to a few minor informalities. The Applicants have amended the specification above as suggested by the Examiner. Accordingly, it is submitted that the objections to the specification have been overcome.

The Section 112 Claim Rejections:

The Examiner rejected claims 13-15 under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Applicants have corrected the antecedent basis issues above. It is thus submitted that the section 112 claim rejections have been overcome and should be withdrawn.

The Section 102 Claim Rejections:

The Examiner rejected claims 1, 5, 12, 14 and 16 under 35 U.S.C. § 102(e) as anticipated by Wooster et al. (U.S. Patent No. 6,023,680).

Independent claims 1 and 17 are method claims that require the step of “inputting a CAD model, which is representative of the surface of the physical part, into a sensor planner” and “providing a CAD model of a physical part to be examined”, respectively. Contrary to the Examiner’s contention, the Applicants submit that the Wooster et al. reference does not teach or suggest the step of inputting or providing a CAD model of the surface to be measured. In fact, Wooster et al. teaches a system for measuring a physical shape or part with no matching digital CAD model information available. Consequently, the system taught by Wooster et al. is less automatic and significantly more complex.

The Examiner refers to Column 2, lines 27-30 of Wooster et al. in support of the contention that Wooster et al. teaches inputting a CAD model. However, the Examiner was referencing the Background Section of the Wooster et al. reference, which refers to prior processes that utilize an algorithm to solve optimization problems created by prior systems that visited each point from a predetermined list of inspection points generated from a CAD layout data. The Wooster et al. reference dismisses this as a “suboptimal solution” and according to its disclosed method teaches having the user generate a set of view points. Thereafter, the set of view points are automatically reduced from a much larger number by solving a set-covering problem. The Wooster et al. reference is best applied to measuring a part without CAD.

This is distinctively different than Applicants’ claimed invention, which utilizes CAD data of the part to automatically generate a set of view points equivalently in one step. As Wooster et al. fails to teach the utilization of any CAD data to assist in measuring the surface of the part, it fails to teach or suggest Applicants’ invention of claims 1 and 17.

It is therefore submitted that claims 1 and 17 define over the Wooster et al. reference for at least these reasons and that claims 2-11 and 18-22, which depend from claims 1 and 17 respectively are allowable for the same reasons.

Claim 12 requires “a CAD model, which is a computer representation of one or more surfaces of a physical object that are to be measured. This claim thus requires the use of CAD data to assist in a sensor planning system. It is submitted that claim 12 is allowable for the same reasons provided above in connection with claims 1 and 17, namely that Wooster et al. fails to teach or suggest a CAD model or any other CAD data to assist in determining sensor location.

It is therefore submitted that claim 12 is allowable over the art for at least this reason, and that claim 13-16 which depend from claim 12, are allowable for the same reasons.

Claims 1, 12, and 17 have also been amended to require that the sensor model is representative of a digital image capturing sensor. Conversely, Wooster et al. is only suited for an analog system – not a digital system. Applicants’ digital device addresses issues, such as resolution constraint, which is key for a digital device to achieve the required precision. This accuracy is not considered by and not taught or suggested by Wooster et al. The utilization of a digital device provides advantages from a technology evolution point of view.

It is therefore submitted that claims 1, 12 and 17 and claims 2-11, 13-16, and 18-22, which depend therefrom, are allowable for the same reasons.

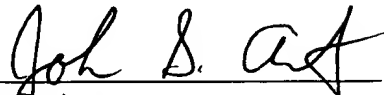
Conclusion:

It is respectfully submitted that all objections and rejections of record have been overcome and that all pending claims are in a condition for allowance. A notice of allowability is therefore respectfully solicited.

If the Examiner should have any questions he/she is urged to contact the undersigned at (248) 223-9500.

Respectfully Submitted,

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